Remarks

In light of the above amendments and remarks to follow, reconsideration is respectfully requested.

Rejection under Section 112, Second Paragraph

Claims 1-18 have been rejected as indefinite. In particular, the Office Action states that it is unclear whether "a first code symbol" and "a second code symbol" in the bodies of these claims refer to the same code symbols recited in the preambles. Each of claims 1, 13 and 16 has been amended herein to clarify that the "first code symbol" and the "second code symbol" recited in each claim preamble correspond to the "first code symbol" and the "second code symbol" recited in the body of such claim. It is believed, therefore, that claims 1-18 now comply with 35 USC §112, second paragraph.

Rejection under Section 102

Claims 1-18 have been rejected as anticipated by the Jensen, et al. US Patent 5,450,490. In the Response to Arguments on page 10 of the outstanding Office Action, it is stated:

> [T]he recitation of "at least one code symbol representing a different one of the message symbols positioned in between the first and second symbols" has not been given patentable weight because the recitation occurs only in the preamble.

The independent claims (1, 13 and 16) as amended herein equate the "first code symbol" and the "second code symbol" in the body of each claim with the "first and second code symbols" as recited in the preamble of such claim. Since the preamble specifies that the first and second code symbols are displaced in time by another symbol representing a different message symbol, this limitation is thus carried into the body of the claim and the body of the claim depends on the preamble for completeness. See the discussion of *In re Hirao*, 190 USPQ 15 in the last sentence on page 10 of the outstanding Office Action. Accordingly, it is respectfully submitted that this limitation is entitled to patentable weight.

The discussion in the second paragraph on page 11 of the Response to Arguments regards the plurality of "digits" or message symbols (1, 0, S and E) disclosed in the Jensen, et al. patent, as a single message symbol. However, in Jensen et al., a message comprises a string of message symbols each encoded as a unique combination of code signal components. See Col. 10, lines 40 through 52 and Col. 16, lines 13 through 19. More specifically, each of the message symbols is produced as streams of data representing its unique combination of frequency components output for the duration of the symbol (1, 0, S and E). See Col. 12, lines 28-55. Therefore, a correct understanding of the Jensen, et al. reference regards a "message" as a string of "message symbols" each of which is encoded as a unique combination of frequency components present in an audio signal for a given symbol duration. It is thus incorrect to regard the symbols 1, 0, S and E of Jensen, et al. as components of a single message symbol; rather, each symbol 1, 0, S and E is a *separate message symbol.*

In the present invention as recited in independent claims 1, 13 and 16, unlike Jensen, et al., a message symbol comprises *two code symbols* separated in time by another code symbol representing a *different* message symbol. Viewed overall, the message to be detected by the claimed invention at its highest level is termed a "predetermined message". At the next level, the predetermined message comprises a plurality of "message symbols". At a third level (not disclosed by Jensen, et al.) one of the message symbols, a "predetermined message symbol", is represented by "first and second code symbols" that are displaced in time in the audio signal with another code symbol representing a *different message symbol* positioned in time between them. Jensen, et al. disclose a string or sequence of message symbols representing a message, but do not represent a message symbol by two code symbols separated in time by another code symbol representing a different message symbol.

The claimed systems and methods of present claims 1, 13 and 16 detect such a predetermined message symbol by accumulating a first signal value representing the first code symbol and a second signal value representing the second code symbol. The first and second signal values are examined to detect the presence of

the predetermined message symbol. In contrast, the text of Jensen, et al. in Col. 21, lines 25 through 29 (cited on page 3 of the outstanding Office Action) provides:

> [T]he apparatus of FIG. 11 accumulates data indicating the presence of code components in each of the bins of interest repeatedly for at least a major portion of the *predetermined interval in which a code symbol can be found* [Emphasis added].

Clearly, this cited portion of the reference describes a technique for detecting a *certain code symbol* existing within a certain *predetermined interval*. Note also that Jensen et al. make no distinction between code symbols, message symbols and "data states": each is simply a unique set of code signal components present in a predetermined interval of the audio signal. See Jensen, et al. in Col. 10, lines 40 through 62, along with Col.21, lines 25 through 29, cited above.

Therefore, the decoder of Jensen, et al. looks to a certain predetermined interval to detect a message symbol and the detection of the symbol is dependent solely on the accumulation of data within that one symbol interval. But in the present invention a message symbol is detected based on the accumulation of signal values representing at least *two code symbols* separated in time by at least one further code symbol representing a *different message symbol*.

The codes representing the message symbol are thus spread out in time, since they are separated by one or more codes representing one or more *other* message symbols. This spreading out of the data representing a single message symbol and the accumulation of the spread-out data in the decoding systems and methods of the present invention substantially improves its ability to detect the encoded messages in the event of burst errors and the like.

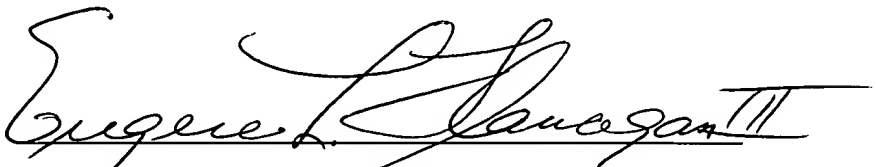
Accordingly, it is respectfully submitted that claims 1, 13 and 16 are not anticipated by Jensen, et al. and are in condition for allowance.

Since all of the remaining claims depend from one of claims 1, 13 and 16, it is respectfully submitted that all of the claims in the present application are in condition for allowance.

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached page is captioned, "Version with Markings to Show Changes Made."

Early and favorable consideration hereof is solicited.

Respectfully submitted,



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Version with Markings to Show Changes Made

1. (Twice Amended) A system for decoding a predetermined message symbol of a plurality of message symbols embedded in an audio signal, the plurality of message symbols being contained within a predetermined message, [each of] the predetermined message symbol [symbols] being represented by first and second code symbols displaced in time in the audio signal with at least one code symbol representing a different one of the message symbols positioned in time between the first and second code symbols, comprising:

means for accumulating a first signal value of [a] the first code symbol representing [a] the predetermined message symbol and a second signal value of [a] the second code symbol representing the [same] predetermined message symbol; and

means for examining the accumulated first and second signal values to detect the predetermined message symbol represented by the first and second code symbols.

13. (Twice Amended) A method for decoding a predetermined message symbol of a plurality of message symbols incorporated in an audio signal, the plurality of message symbols being contained within a predetermined message, [each of] the predetermined message symbol [symbols] being represented by first and second code symbols displaced in time in the audio signal with at least one code symbol representing a different one of the message symbols positioned in time between the first and second code symbols, comprising:

accumulating a first signal value of [a] the first code symbol representing [a] the predetermined message symbol and a second signal value of [a] the second code symbol representing the [same] predetermined message symbol; and

examining the accumulated first and second signal values to detect the predetermined message symbol.

16. (Amended) A system for decoding a predetermined message symbol of a plurality of message symbols incorporated in an audio signal, the plurality of message symbols being contained within a predetermined message, [each of] the predetermined message symbol [symbols] being represented by first and second code symbols displaced in time in the audio signal with at least one code symbol representing a different one of the message symbols positioned in time between the first and second code symbols, comprising:

an input device for receiving [a] the first code symbol representing [a] the predetermined message symbol and [a] the second code symbol representing the [same] predetermined message symbol; and

a digital processor in communication with the input device to receive data therefrom representing the first and second code symbols, the digital processor being programmed to accumulate a first signal value representing the first code symbol and a second signal value representing the second code symbol, the digital processor being further programmed to examine the accumulated first and second signal values to detect the predetermined message symbol.